

A NEW SPECIES OF *FLUMINICOLA* WITH NOTES
ON "COLORADO DESERT" SHELLS, AND
ON THE GENUS *CLAPPIA*

BY J. P. E. MORRISON¹

Tryonia clathrata Stimpson, collected by Blake (U.S.N.M. No. 27893 and U.S.N.M. No. 170786) and by Gen. Carlton (1861-1862) from the "Colorado Desert" (U.S.N.M. No. 30596), and by Merriam from the Pahrnagat Valley, Nevada (1891) (U.S.N.M. No. 107735 and U.S.N.M. No. 123621), is probably limited to the Nevada locality as hinted by Stearns.²

Fluminicola merriami Pilsbry & Beecher, described from specimens collected by Merriam in the Pahrnagat Valley³ (U.S.N.M. No. 123626), was also collected in company with *T. clathrata* by Gen. Carlton (1861-1862) from the "Colorado Desert" (U.S.N.M. No. 30631).

Fluminicola avernalis Pilsbry, and *F. a. carinifera* Pilsbry⁴ are also from the Pahrnagat Valley, Nevada, if association is any indication of habitat. Stearns' 1893 record of *F. nuttalliana*⁵ was based on a mixture of several forms: *F. fusca* (Hald.) collected by Merriam from Shoshone Falls, Idaho (U.S.N.M. No. 58596), and the three smaller forms from the "Colorado Desert." Stearns' statement: "A dwarfed but characteristic aspect of this species occurs among the surface shells in the Colorado Desert," evidently refers to the mixed lot collected by General Carlton in 1861-1862.

This lot included *F. merriami* referred to above, and also a few specimens of *F. avernalis* and of *F. a. carinifera*, now re-catalogued as U.S.N.M. No. 535694 and U.S.N.M. No. 535695, respectively.

Thus it is evident that all four forms, *T. clathrata*, *F. merriami*, *F. avernalis*, and *F. a. carinifera*, are really from the Pahrnagat Valley of Nevada. It is also evident that the term "Colorado

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² N. Am. Fauna, No. 7, Pt. 2, p. 281, 1893.

³ NAUTILUS 5: 143, 1892.

⁴ NAUTILUS 48: 92-93, 1935.

⁵ N. Am. Fauna, No. 7, Pt. 2, p. 282, 1893.

Desert" of the Blake and Carlton survey collections was not incorrect, but all-inclusive, equivalent to the more modern term of "Great Basin Area."

The wide distribution of *Tryonia protea* (Gould), definitely known to be from the Colorado Desert, California ("Cienaga Grande"), and from Sevier and Great Salt lakes and western Tooele Co., Utah, may be explained by the supposition that these Utah localities were at one time actually tributary to the Colorado River. This previous stream continuity is also attested by the distribution of *Fluminicola coloradoense* in the present headwaters of the Colorado River and in various discontinuous stream localities in Utah. According to all specimens seen, the geographic boundary between *F. fusca* and *F. coloradoense* is the present divide between the Snake and the Utah-Colorado Drainages.

FLUMINICOLA COLORADOENSE, new species.

Shell: large (for the genus), subglobose-conic, smooth; spire moderate, the whorls well rounded, separated by a deep suture; the body whorl is voluminous, rapidly enlarged, in some specimens producing almost a neritiform appearance. Aperture narrowly rounded above; widely, evenly rounded below. The umbilical chink is distinct, being wider and more prominent than in *F. fusca*. The color is lighter than that of *F. fusca*; apex pinkish, the remainder of the shell a dirty white, not reddish or purplish throughout.

The type (U.S.N.M. No. 526631) and several paratypes (U.S.N.M. No. 526576) were collected by H. F. Wickham from the Green River, Wyoming. The holotype measures: Height 9.0 mm.; diameter 8.3 mm.; aperture height 6.0 mm.; aperture diameter 5.0 mm.; whorls $4\frac{1}{2}$.

This, the common large *Fluminicola* of Utah and Wyoming (in the headwaters of the Colorado River), has remained unnamed because it was previously confused with *F. hindsi* from the Kootanie, *F. columbiana* from the Columbia, *F. nuttalliana* from the Wahlamette, *F. fusca* from the Snake, and *F. seminalis* from the Sacramento, all of which are superficially similar, but nevertheless quite distinct.

The United States National Museum collections also include specimens of *Fluminicola coloradoense* from:

- Bear River, Soda Springs, Idaho (L. Bruner) (U.S.N.M. No. 526730)
Malad River, Eagle Rock, Oneida Co., Idaho (Bruner) (U.S.N.M. No. 526354)
Malad River, Utah (Hemphill) (U.S.N.M. No. 47873)
Shores of Utah Lake (Capt. Burton) (U.S.N.M. No. 9222)
Utah Lake, Utah (Stearns Coll.) (U.S.N.M. No. 31270 and No. 75452)
Kelton, Utah (V. Bailey) (U.S.N.M. No. 123623)
Salt Lake City, Utah (E. Lawrence) (U.S.N.M. No. 519988)
Willow Creek, Camp 22 (Dr. Curtis) (U.S.N.M. No. 28537)
Head of Green River, Utah (Malloney) (U.S.N.M. No. 28103 and No. 120462)
Harris Fork of Green River, Wyoming (Bruner) (U.S.N.M. No. 526754)
Bell's Fish Cliff, Horn's Pk., Wyoming (Bruner) (U.S.N.M. No. 539160)

Notes on the genus Clappia

Clappia, originally monotypic,⁶ is now known to be more inclusive, and not confined to the Coosa River drainage.

The anatomy of *Somatogyrus tryoni* Pilsbry & F. C. Baker⁷ was well worked out in the Wisconsin Monograph,⁸ where Dr. Baker pointed out the great similarity of its radula to that of *Clappia*, namely the prominent central cusp, flanked by an equal number of smaller cusps on each side, on the cutting edge of the lateral tooth.

Recent examination of paratype males of the genotype, *Clappia clappi* Walker (U.S.N.M. No. 451821), has shown that the verge of this species is identical with that described and figured for *S. tryoni*.

Although the verge of the genotype of *Somatogyrus*, *S. depressus* Tryon,⁹ is still unknown, the radular differences will easily distinguish it from *Clappia*.

A third species that must be transferred to *Clappia*, is *Somatogyrus virginicus* Walker,¹⁰ material of which, personally collected in Occoquan Creek, in the gorge 1½ miles upstream from Occo-

⁶ Walker, NAUTILUS 22: 89, 1909.

⁷ Pilsbry & F. C. Baker, NAUTILUS 41: 24, 1927.

⁸ F. C. Baker, F. W. Moll, Wisconsin I: 150-154, 1928.

⁹ Stimpson, Researches, etc., p. 21, 1865.

¹⁰ Walker, NAUTILUS 17: 141, 1904.

quan, Prince Wm. Co., Virginia (U.S.N.M. No. 484806) has been recently examined anatomically. The verge of *C. virginicus* is identical with that of *C. clappi*.

Clappia therefore includes *C. clappi* from the Coosa River, *C. virginica* from the Potomac drainage, and *C. tryoni*, which ranges as far north as the headwaters of the Wisconsin River.¹¹ Further knowledge of the range of the genus must await critical examination of other species at present included in *Somatogyrus*.

LAND MOLLUSCS COLLECTED AT HEBRON, LABRADOR, AND LAKE HARBOUR, SOUTH BAFFIN ISLAND

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The land and freshwater molluscs of the eastern Arctic of Canada are poorly known. A few collections have been made at Ungava Bay, Labrador, and examined by Dall or Whiteaves. Dall (1905) presented all that has been recorded to date on the subject. Altogether, in his treatise, there are mentioned 13 species and one doubtful occurrence (*Vertigo hoppii* Möller) for Ungava Bay, Labrador, and two species for Labrador without more detailed locality, and finally *Gyraulus vermicularis* Gould is listed for Labrador in his table, but is omitted in the text.

In the present paper, five species of land molluscs are recorded. No freshwater species were found at all. There appears to be a much greater variety of non-marine molluscs in Ungava. This may be attributed perhaps to climatic differences, as the Ungava collections came from a sparsely forested or sub-Arctic region. In contrast, the specimens herein described came from the treeless regions or the Arctic proper. The species found at Lake Harbour constitute, I believe, the first record of any non-marine molluscs from Baffin Island. The localities in question are:

Hebron, northern Labrador. Lat. 58° 20' N., long. 62° 30' W., roughly 200 miles east of Fort Chimo, Ungava Bay.

Lake Harbour, southern Baffin Island. Lat. 62° 50' N., long. 69° 52' W.

¹¹ Morrison, Trans. Wis. Acad. Sci. 27: 369, 1932.